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JUN 2 1 2001   —# 5

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TECH CENTER 1600/2900

RAW SEQUENCE LISTING   DATE: 05/10/2001
PATENT APPLICATION: US/09/747,521   TIME: 13:02:09

Input Set : A:\227274079.ST25.txt
Output Set: N:\CRF3\05102001\I747521.raw

ENTERED

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 3 <110> APPLICANT: Galloway, Darrel
 4         Mateczun, Alfred
 6 <120> TITLE OF INVENTION: Methods for Protection Against Lethal Infection with Bacillus Anthracis
 8 <130> FILE REFERENCE: 22727/04079
10 <140> CURRENT APPLICATION NUMBER: 09/747,521
11 <141> CURRENT FILING DATE: 2000-12-21
13 <160> NUMBER OF SEQ ID NOS: 8
15 <170> SOFTWARE: PatentIn version 3.0
17 <210> SEQ ID NO: 1
18 <211> LENGTH: 2430
19 <212> TYPE: DNA
20 <213> ORGANISM: Bacillus anthracis
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29 1               5                   10                  15
31 gta aca gca att act ttg agt ggt ccc gtc ttt atc ccc ctt gta cag          96
32 Val Thr Ala Ile Thr Leu Ser Gly Pro Val Phe Ile Pro Leu Val Gln
33             20                  25                  30
35 ggg gcg ggc ggt cat ggt gat gta ggt atg cac gta aaa gag aaa gag         144
36 Gly Ala Gly Gly His Gly Asp Val Gly Met His Val Lys Glu Lys Glu
37             35                  40                  45
39 aaa aat aaa gat gag aat aag aga aaa gat gaa gaa cga aat aaa aca         192
40 Lys Asn Lys Asp Glu Asn Lys Arg Lys Asp Glu Glu Arg Asn Lys Thr
41     50                  55                  60
43 cag gaa gag cat tta aag gaa atc atg aaa cac att gta aaa ata gaa         240
44 Gln Glu Glu His Leu Lys Glu Ile Met Lys His Ile Val Lys Ile Glu
45 65                  70                  75                  80
47 gta aaa ggg gag gaa gct gtt aaa aaa gag gca gca gaa aag cta ctt         288
48 Val Lys Gly Glu Glu Ala Val Lys Lys Glu Ala Ala Glu Lys Leu Leu
49             85                  90                  95
51 gag aaa gta cca tct gat gtt tta gag atg tat aaa gca att gga gga         336
52 Glu Lys Val Pro Ser Asp Val Leu Glu Met Tyr Lys Ala Ile Gly Gly
53             100                 105                 110
55 aag ata tat att gtg gat ggt gat att aca aaa cat ata tct tta gaa         384
56 Lys Ile Tyr Ile Val Asp Gly Asp Ile Thr Lys His Ile Ser Leu Glu
57             115                 120                 125
59 gca tta tct gaa gat aag aaa aaa ata aaa gac att tat ggg aaa gat         432
60 Ala Leu Ser Glu Asp Lys Lys Lys Ile Lys Asp Ile Tyr Gly Lys Asp
61     130                 135                 140
63 gct tta tta cat gaa cat tat gta tat gca aaa gaa gga tat gaa ccc         480
64 Ala Leu Leu His Glu His Tyr Val Tyr Ala Lys Glu Gly Tyr Glu Pro
65 145                 150                 155                 160
67 gta ctt gta atc caa tct tcg gaa gat tat gta gaa aat act gaa aag         528
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69               165               170               175
71 gca ctg aac gtt tat tat gaa ata ggt aag ata tta tca agg gat att      576
72 Ala Leu Asn Val Tyr Tyr Glu Ile Gly Lys Ile Leu Ser Arg Asp Ile
73               180               185               190
75 tta agt aaa att aat caa cca tat cag aaa ttt tta gat gta tta aat      624
76 Leu Ser Lys Ile Asn Gln Pro Tyr Gln Lys Phe Leu Asp Val Leu Asn
77               195               200               205
79 acc att aaa aat gca tct gat tca gat gga caa gat ctt tta ttt act      672
80 Thr Ile Lys Asn Ala Ser Asp Ser Asp Gly Gln Asp Leu Leu Phe Thr
81        210               215               220
83 aat cag ctt aag gaa cat ccc aca gac ttt tct gta gaa ttc ttg gaa      720
84 Asn Gln Leu Lys Glu His Pro Thr Asp Phe Ser Val Glu Phe Leu Glu
85 225               230               235               240
87 caa aat agc aat gag gta caa gaa gta ttt gcg aaa gct ttt gca tat      768
88 Gln Asn Ser Asn Glu Val Gln Glu Val Phe Ala Lys Ala Phe Ala Tyr
89               245               250               255
91 tat atc gag cca cag cat cgt gat gtt tta cag ctt tat gca ccg gaa      816
92 Tyr Ile Glu Pro Gln His Arg Asp Val Leu Gln Leu Tyr Ala Pro Glu
93               260               265               270
95 gct ttt aat tac atg gat aaa ttt aac gaa caa gaa ata aat cta tcc      864
96 Ala Phe Asn Tyr Met Asp Lys Phe Asn Glu Gln Glu Ile Asn Leu Ser
97               275               280               285
99 ttg gaa gaa ctt aaa gat caa cgg atg ctg tca aga tat gaa aaa tgg      912
100 Leu Glu Glu Leu Lys Asp Gln Arg Met Leu Ser Arg Tyr Glu Lys Trp
101        290               295               300
103 gaa aag ata aaa cag cac tat caa cac tgg agc gat tct tta tct gaa      960
104 Glu Lys Ile Lys Gln His Tyr Gln His Trp Ser Asp Ser Leu Ser Glu
105 305               310               315               320
107 gaa gga aga gga ctt tta aaa aag ctg cag att cct att gag cca aag      1008
108 Glu Gly Arg Gly Leu Leu Lys Lys Leu Gln Ile Pro Ile Glu Pro Lys
109               325               330               335
111 aaa gat gac ata att cat tct tta tct caa gaa gaa aaa gag ctt cta      1056
112 Lys Asp Asp Ile Ile His Ser Leu Ser Gln Glu Glu Lys Glu Leu Leu
113               340               345               350
115 aaa aga ata caa att gat agt agt gat ttt tta tct act gag gaa aaa      1104
116 Lys Arg Ile Gln Ile Asp Ser Ser Asp Phe Leu Ser Thr Glu Glu Lys
117        355               360               365
119 gag ttt tta aaa aag cta caa att gat att cgt gat tct tta tct gaa      1152
120 Glu Phe Leu Lys Lys Leu Gln Ile Asp Ile Arg Asp Ser Leu Ser Glu
121        370               375               380
123 gaa gaa aaa gag ctt tta aat aga ata cag gtg gat agt agt aat cct      1200
124 Glu Glu Lys Glu Leu Leu Asn Arg Ile Gln Val Asp Ser Ser Asn Pro
125 385               390               395               400
127 tta tct gaa aaa gaa aaa gag ttt tta aaa aag ctg aaa ctt gat att      1248
128 Leu Ser Glu Lys Glu Lys Glu Phe Leu Lys Lys Leu Lys Leu Asp Ile
129               405               410               415
131 caa cca tat gat att aat caa agg ttg caa gat aca gga ggg tta att      1296
132 Gln Pro Tyr Asp Ile Asn Gln Arg Leu Gln Asp Thr Gly Gly Leu Ile
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Input Set : A:\227274079.ST25.txt
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133            420                425                430
135 gat agt ccg tca att aat ctt gat gta aga aag cag tat aaa agg gat      1344
136 Asp Ser Pro Ser Ile Asn Leu Asp Val Arg Lys Gln Tyr Lys Arg Asp
137            435                440                445
139 att caa aat att gat gct tta tta cat caa tcc att gga agt acc ttg      1392
140 Ile Gln Asn Ile Asp Ala Leu Leu His Gln Ser Ile Gly Ser Thr Leu
141     450                455                460
143 tac aat aaa att tat ttg tat gaa aat atg aat atc aat aac ctt aca      1440
144 Tyr Asn Lys Ile Tyr Leu Tyr Glu Asn Met Asn Ile Asn Asn Leu Thr
145 465                470                475                480
147 gca acc cta ggt gcg gat tta gtt gat tcc act gat aat act aaa att      1488
148 Ala Thr Leu Gly Ala Asp Leu Val Asp Ser Thr Asp Asn Thr Lys Ile
149                485                490                495
151 aat aga ggt att ttc aat gaa ttc aaa aaa aat ttc aaa tat agt att      1536
152 Asn Arg Gly Ile Phe Asn Glu Phe Lys Lys Asn Phe Lys Tyr Ser Ile
153            500                505                510
155 tct agt aac tat atg att gtt gat ata aat gaa agg cct gca tta gat      1584
156 Ser Ser Asn Tyr Met Ile Val Asp Ile Asn Glu Arg Pro Ala Leu Asp
157            515                520                525
159 aat gag cgt ttg aaa tgg aga atc caa tta tca cca gat act cga gca      1632
160 Asn Glu Arg Leu Lys Trp Arg Ile Gln Leu Ser Pro Asp Thr Arg Ala
161     530                535                540
163 gga tat tta gaa aat gga aag ctt ata tta caa aga aac atc ggt ctg      1680
164 Gly Tyr Leu Glu Asn Gly Lys Leu Ile Leu Gln Arg Asn Ile Gly Leu
165 545                550                555                560
167 gaa ata aag gat gta caa ata att aag caa tcc gaa aaa gaa tat ata      1728
168 Glu Ile Lys Asp Val Gln Ile Ile Lys Gln Ser Glu Lys Glu Tyr Ile
169                565                570                575
171 agg att gat gcg aaa gta gtg cca aag agt aaa ata gat aca aaa att      1776
172 Arg Ile Asp Ala Lys Val Val Pro Lys Ser Lys Ile Asp Thr Lys Ile
173            580                585                590
175 caa gaa gca cag tta aat ata aat cag gaa tgg aat aaa gca tta ggg      1824
176 Gln Glu Ala Gln Leu Asn Ile Asn Gln Glu Trp Asn Lys Ala Leu Gly
177            595                600                605
179 tta cca aaa tat aca aag ctt att aca ttc aac gtg cat aat aga tat      1872
180 Leu Pro Lys Tyr Thr Lys Leu Ile Thr Phe Asn Val His Asn Arg Tyr
181     610                615                620
183 gca tcc aat att gta gaa agt gct tat tta ata ttg aat gaa tgg aaa      1920
184 Ala Ser Asn Ile Val Glu Ser Ala Tyr Leu Ile Leu Asn Glu Trp Lys
185 625                630                635                640
187 aat aat att caa agt gat ctt ata aaa aag gta aca aat tac tta gtt      1968
188 Asn Asn Ile Gln Ser Asp Leu Ile Lys Lys Val Thr Asn Tyr Leu Val
189                645                650                655
191 gat ggt aat gga aga ttt gtt ttt acc gat att act ctc cct aat ata      2016
192 Asp Gly Asn Gly Arg Phe Val Phe Thr Asp Ile Thr Leu Pro Asn Ile
193            660                665                670
195 gct gaa caa tat aca cat caa gat gag ata tat gag caa gtt cat tca      2064
196 Ala Glu Gln Tyr Thr His Gln Asp Glu Ile Tyr Glu Gln Val His Ser
197            675                680                685
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Input Set : A:\227274079.ST25.txt
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199 aaa ggg tta tat gtt cca gaa tcc cgt tct ata tta ctc cat gga cct     2112
200 Lys Gly Leu Tyr Val Pro Glu Ser Arg Ser Ile Leu Leu His Gly Pro
201     690             695             700
203 tca aaa ggt gta gaa tta agg aat gat agt gag ggt ttt ata cac gaa     2160
204 Ser Lys Gly Val Glu Leu Arg Asn Asp Ser Glu Gly Phe Ile His Glu
205 705             710             715             720
207 ttt gga cat gct gtg gat gat tat gct gga tat cta tta gat aag aac     2208
208 Phe Gly His Ala Val Asp Asp Tyr Ala Gly Tyr Leu Leu Asp Lys Asn
209             725             730             735
211 caa tct gat tta gtt aca aat tct aaa aaa ttc att gat att ttt aag     2256
212 Gln Ser Asp Leu Val Thr Asn Ser Lys Lys Phe Ile Asp Ile Phe Lys
213             740             745             750
215 gaa gaa ggg agt aat tta act tcg tat ggg aga aca aat gaa gcg gaa     2304
216 Glu Glu Gly Ser Asn Leu Thr Ser Tyr Gly Arg Thr Asn Glu Ala Glu
217         755             760             765
219 ttt ttt gca gaa gcc ttt agg tta atg cat tct acg gac cat gct gaa     2352
220 Phe Phe Ala Glu Ala Phe Arg Leu Met His Ser Thr Asp His Ala Glu
221     770             775             780
223 cgt tta aaa gtt caa aaa aat gct ccg aaa act ttc caa ttt att aac     2400
224 Arg Leu Lys Val Gln Lys Asn Ala Pro Lys Thr Phe Gln Phe Ile Asn
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233 <211> LENGTH: 809
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244             20              25              30
247 Gly Ala Gly Gly His Gly Asp Val Gly Met His Val Lys Glu Lys Glu
248         35              40              45
251 Lys Asn Lys Asp Glu Asn Lys Arg Lys Asp Glu Glu Arg Asn Lys Thr
252     50              55              60
255 Gln Glu Glu His Leu Lys Glu Ile Met Lys His Ile Val Lys Ile Glu
256 65              70              75              80
259 Val Lys Gly Glu Glu Ala Val Lys Lys Glu Ala Ala Glu Lys Leu Leu
260             85              90              95
263 Glu Lys Val Pro Ser Asp Val Leu Glu Met Tyr Lys Ala Ile Gly Gly
264             100             105             110
267 Lys Ile Tyr Ile Val Asp Gly Asp Ile Thr Lys His Ile Ser Leu Glu
268     115             120             125
271 Ala Leu Ser Glu Asp Lys Lys Lys Ile Lys Asp Ile Tyr Gly Lys Asp
272     130             135             140
275 Ala Leu Leu His Glu His Tyr Val Tyr Ala Lys Glu Gly Tyr Glu Pro
276 145             150             155             160
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279 Val Leu Val Ile Gln Ser Ser Glu Asp Tyr Val Glu Asn Thr Glu Lys
280              165              170              175
283 Ala Leu Asn Val Tyr Tyr Glu Ile Gly Lys Ile Leu Ser Arg Asp Ile
284              180              185              190
287 Leu Ser Lys Ile Asn Gln Pro Tyr Gln Lys Phe Leu Asp Val Leu Asn
288              195              200              205
291 Thr Ile Lys Asn Ala Ser Asp Ser Asp Gly Gln Asp Leu Leu Phe Thr
292      210              215              220
295 Asn Gln Leu Lys Glu His Pro Thr Asp Phe Ser Val Glu Phe Leu Glu
296 225              230              235              240
299 Gln Asn Ser Asn Glu Val Gln Glu Val Phe Ala Lys Ala Phe Ala Tyr
300              245              250              255
303 Tyr Ile Glu Pro Gln His Arg Asp Val Leu Gln Leu Tyr Ala Pro Glu
304              260              265              270
307 Ala Phe Asn Tyr Met Asp Lys Phe Asn Glu Gln Glu Ile Asn Leu Ser
308              275              280              285
311 Leu Glu Glu Leu Lys Asp Gln Arg Met Leu Ser Arg Tyr Glu Lys Trp
312      290              295              300
315 Glu Lys Ile Lys Gln His Tyr Gln His Trp Ser Asp Ser Leu Ser Glu
316 305              310              315              320
319 Glu Gly Arg Gly Leu Leu Lys Lys Leu Gln Ile Pro Ile Glu Pro Lys
320              325              330              335
323 Lys Asp Asp Ile Ile His Ser Leu Ser Gln Glu Glu Lys Glu Leu Leu
324              340              345              350
327 Lys Arg Ile Gln Ile Asp Ser Ser Asp Phe Leu Ser Thr Glu Glu Lys
328              355              360              365
331 Glu Phe Leu Lys Lys Leu Gln Ile Asp Ile Arg Asp Ser Leu Ser Glu
332      370              375              380
335 Glu Glu Lys Glu Leu Leu Asn Arg Ile Gln Val Asp Ser Ser Asn Pro
336 385              390              395              400
339 Leu Ser Glu Lys Glu Lys Glu Phe Leu Lys Lys Leu Lys Leu Asp Ile
340              405              410              415
343 Gln Pro Tyr Asp Ile Asn Gln Arg Leu Gln Asp Thr Gly Gly Leu Ile
344              420              425              430
347 Asp Ser Pro Ser Ile Asn Leu Asp Val Arg Lys Gln Tyr Lys Arg Asp
348              435              440              445
351 Ile Gln Asn Ile Asp Ala Leu Leu His Gln Ser Ile Gly Ser Thr Leu
352      450              455              460
355 Tyr Asn Lys Ile Tyr Leu Tyr Glu Asn Met Asn Ile Asn Asn Leu Thr
356 465              470              475              480
359 Ala Thr Leu Gly Ala Asp Leu Val Asp Ser Thr Asp Asn Thr Lys Ile
360              485              490              495
363 Asn Arg Gly Ile Phe Asn Glu Phe Lys Lys Asn Phe Lys Tyr Ser Ile
364              500              505              510
367 Ser Ser Asn Tyr Met Ile Val Asp Ile Asn Glu Arg Pro Ala Leu Asp
368              515              520              525
371 Asn Glu Arg Leu Lys Trp Arg Ile Gln Leu Ser Pro Asp Thr Arg Ala
372      530              535              540
375 Gly Tyr Leu Glu Asn Gly Lys Leu Ile Leu Gln Arg Asn Ile Gly Leu
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VERIFICATION SUMMARY   DATE: 05/10/2001
PATENT APPLICATION: US/09/747,521   TIME: 13:02:11

Input Set : A:\227274079.ST25.txt
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